HIGH RESOLUTION COHERENT THREE-DIMENSIONAL SPECTROSCOPY OF IODINE

ZURI R. HOUSE, THRESA A. WELLS, and PETER C. CHEN, *Spelman College Chemistry Department, 350 Spelman Lane, Atlanta, GA 30314*; and BENJAMIN R. STRANGFELD, *Department of Chemistry and Chemical Biology, Georgia Institute of Technology, Atlanta, GA 30332*.

The heavy congestion found in many one-dimensional spectra can make it difficult to study many transitions. A new coherent three-dimensional spectroscopic technique has been developed to eliminate the kind of congestion commonly seen in high resolution electronic spectra. The molecule used for this test was Iodine. A well-characterized transition (X to B) was used to determine which four wave mixing process or processes were responsible for the peaks in the resulting multidimensional spectrum. The resolution of several peaks that overlap in a coherent 2D spectrum can be accomplished by using a higher dimensional (3D) spectroscopic method. This talk will discuss strategies for finding spectroscopic constants using this high resolution coherent 3D spectroscopic method.